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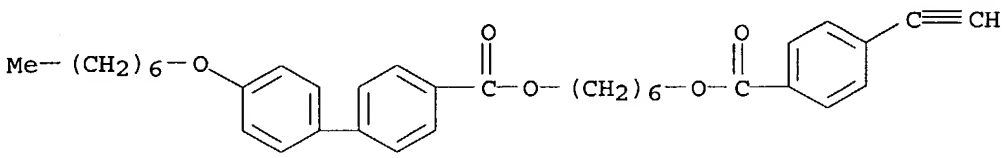
L4 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:221059 CAPLUS
DN 136:263616
ED Entered STN: 22 Mar 2002
TI Acetylene polymers and their use as liquid crystals
IN Tang, Ben Zhong; Lam, Wing Yip; Kong, Xiangxing; Kwok, Hoi Sing
PA Hong Kong
SO U.S. Pat. Appl. Publ., 15 pp., Cont.-in-part of U. S. Ser. No. 352,778, abandoned.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09K019-20
ICS C09K019-12; C09K019-38
NCL 252299650
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002033474	A1	20020321	US 2001-887660	20010220
	US 2003164474	A1	20030904	US 2003-346360	20030117
PRAI	US 1999-352778	B1	19990714		
	US 2001-887660	B1	20010220		

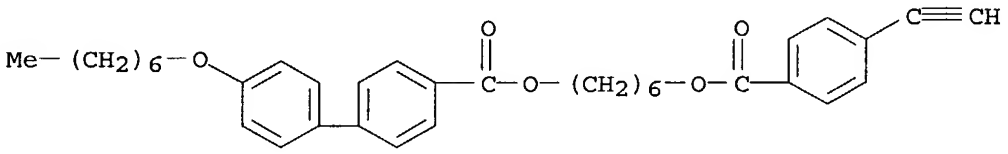
AB There is disclosed a liquid crystalline polyacetylene having a repeat structure of the formula where spa is a spacer group and mes is a mesogenic substituent. [4-([[6-([[4'-(Heptyl)oxy-4-biphenylyl]carbonyl]oxy)hexyl]oxy]carbonyl)phenyl]acetylene was prepared and polymerized to give a liquid crystal polymer.
ST liq crystal polyacetylene
IT Liquid crystals, polymeric
(acetylene polymers and their use as liquid crystals)
IT Polyacetylenes, preparation
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(acetylene polymers and their use as liquid crystals)
IT **222853-71-6P** 225113-59-7P 225245-43-2P 225366-83-6P
225366-85-8P 404954-44-5P
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(acetylene polymers and their use as liquid crystals)
IT 14142-87-1P 59748-17-3P, 4'-(Heptyl)oxy-4-biphenylylcarboxylic Acid
69367-31-3P, 4'-(Nonyl)oxy-4-biphenylcarboxylic acid 78435-17-3P
113943-01-4P 136760-84-4P 222853-69-2P **222853-70-5P**
225113-58-6P 225245-42-1P 225245-46-5P 225245-53-4P 225366-79-0P
225366-80-3P 225366-81-4P 225366-82-5P 403647-26-7P 404954-42-3P
404954-46-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(acetylene polymers and their use as liquid crystals)
IT 92-88-6, 4-4'-Biphenol 99-96-7, 4-Hydroxybenzoic acid, reactions
143-07-7, Lauric acid, reactions 629-04-9, 1-Bromoheptane 629-11-8, 1,6-Hexanediol 693-58-3, 1-Bromononane 5390-04-5, 4-Pentyn-1-ol
10602-00-3, 4-Ethynylbenzoic acid 14267-92-6, 5-Chloro-1-pentyne
53293-00-8, 5-Hexynoic acid 58574-03-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(acetylene polymers and their use as liquid crystals)
IT **222853-71-6P**
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(acetylene polymers and their use as liquid crystals)
RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



IT **222853-70-5P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(acetylene polymers and their use as liquid crystals)
RN 222853-70-5 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester (9CI) (CA INDEX NAME)



L4 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:520476 CAPLUS
DN 135:304356
ED Entered STN: 19 Jul 2001
TI The role of the phenyl and biphenyl chromophores in the blue luminescent liquid crystalline polyacetylenes
AU Huang, Y. M.; Lam, J. W. Y.; Cheuk, K. K. L.; Ge, W.; Tang, B. Z.
CS Department of Physics, Hong Kong University of Science and Technology, Kowloon, Clear Water Bay, Hong Kong
SO Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (2001), B85(2-3), 242-246
CODEN: MSBTEK; ISSN: 0921-5107
PB Elsevier Science S.A.
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 75
AB The photoluminescence (PL) of liquid crystalline polyacetylenes {-[HC:C(CH2)9-OCO-Biph-O-(CH2)6CH3]n- (1), -[HC:C(CH2)3-O-C6H4-CO2-C6H4-O-(CH2)5CH3]n- (2), and -[HC:C-C6H4-CO2-(CH2)6-OCO-Biph-O(CH2)6CH3]n- (3)} have been studied and the textures of the polymers are characterized by polarized optical microscope. In dilute THF (THF) solution, 1 emits strong deep-blue PL with a single PL peak at .apprx.380 nm, while 2 emits faint blue PL with a single peak locating at .apprx.450 nm. Interestingly, the PL of 3 is composed of two peaks, one of which locates at 380 nm and the other at 450 nm. Using extended Huckel tight-binding method, we have calculated their electronic structures and the electronic states of the polymers are essentially an ensemble of the extended states characteristic of the backbone and the localized states characteristic of the pendant. Our exptl. and calculated results prove that both the absorption and blue emissions take place in the Ph or biphenyl mesogens in the pendants and the types of chromophores determine the emission colors of the polymers.
ST polarized optical microscope liq cryst polyacetylene photoluminescence

study; phenyl biphenyl chromophore effect blue luminescent polyacetylene
IT Polyacetylenes, properties
RL: PRP (Properties)
(Ph group-containing; effect of Ph and biphenyl chromophores on liquid crystalline
polyacetylenes)
IT Liquid crystals, polymeric
Luminescent substances
(effect of Ph and biphenyl chromophores on liquid crystalline polyacetylenes)
IT Polarized optical spectra
(for study of chromophore effect on liquid crystalline polyacetylenes)
IT Chromophores
Luminescence
(of liquid crystalline polyacetylenes)
IT 225113-59-7 366454-50-4 **366454-52-6**
RL: PRP (Properties)
(effect of Ph and biphenyl chromophores on liquid crystalline polyacetylenes)
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Baeriswyl, D; Electronic Properties of Polymers 1982, P13
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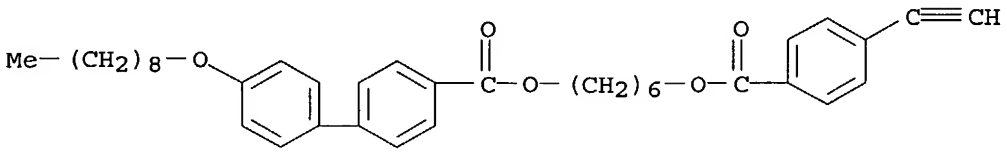
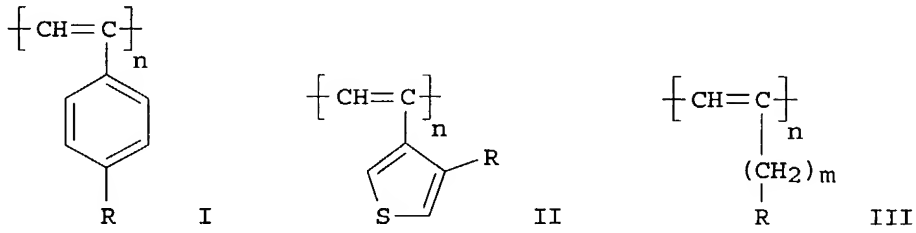
IT **366454-52-6**
RL: PRP (Properties)
(effect of Ph and biphenyl chromophores on liquid crystalline polyacetylenes)
RN 366454-52-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(nonyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 366454-51-5
CMF C37 H44 O5



L4 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:846478 CAPLUS
DN 134:170723
ED Entered STN: 05 Dec 2000
TI Photoconductivity of substituted polyacetylenes
AU Chen, Hong Zheng; Xu, Rui Song; Sun, Qunhui; Lam, Jacky W. Y.; Wang, Mang; Tang, Ben Zhong
CS Department of Chemistry and Center for Display Research, Hong Kong University of Science and Technology, Hong Kong, Peop. Rep. China
SO Polymers for Advanced Technologies (2000), 11(8-12), 442-449
CODEN: PADTE5; ISSN: 1042-7147
PB John Wiley & Sons Ltd.
DT Journal
LA English
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
GI



AB Photoconduction under visible light illumination was studied using xerog. discharge technique in photoreceptors containing p-substituted polyacetylenes I (R = H (1), Me (2), CO2(CH2)6OCO-p-C6H4-p-C6H4-p-OC7H15 (3)), β-substituted poly(3-thienylacetylenes) II (R = SiMe3 (4), Br (5)), and m-substituted poly(1-alkynes) III (m = 2, R = CO(CH2)6OCO-p-C6H4-p-C6H4-p-OC9H19 (6), m = 3, R = 9-carbazolyl (7), m = 9, R = CO2(CH2)6OCO-p-C6H4-p-C6H4-p-OC7H15 (8)). In the undoped state, 2-4 and 6-8 showed much higher photosensitivity than (1). The polyacetylenes with electron-donating and/or hole-transporting substituents performed better than do those with electron-accepting ones. The liquid crystalline polyacetylene 6 exhibited very high photosensitivity, probably because of the crystalline aggregates of its mesogenic pendants. C60 acted as a photocond. enhancer when doped to amorphous 3 but functioned as a quencher when mixed with liquid crystalline 6. While 3 showed low photosensitivity in the undoped state, doping with I2 and sensitization with Crystal violet dramatically increased its photosensitivity up to 41.2 + 10-3 lx-1-sec-1.
ST photocond substituted polyacetylene electrophotog photoreceptor
IT Electrophotographic photoconductors (photoreceptors)

Liquid crystals, polymeric
Molecular association
Photoconductivity
(photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

IT Polyacetylenes, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

IT Molecular structure-property relationship
(photocond.; photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

IT 83890-47-5
RL: DEV (Device component use); USES (Uses)
(charge transport material; photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

IT 25038-69-1 34807-69-7 **222853-71-6** 225244-01-9 225244-03-1 225366-83-6 225500-66-3 325147-61-3
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

IT 548-62-9, Crystal violet 7553-56-2, Iodine, processes 99685-96-8, Fullerene C60
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(sensitizer; photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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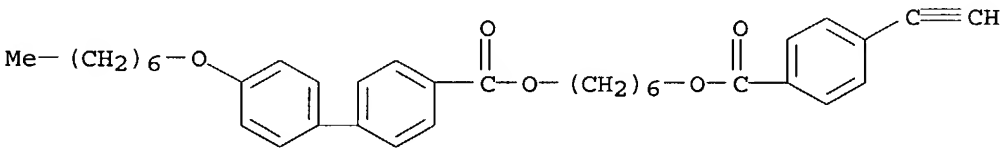
IT **222853-71-6**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(photocond. of substituted polyacetylene-based electrophotog. photoreceptors containing under visible light exposure)

RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:126874 CAPLUS
DN 132:308922
ED Entered STN: 24 Feb 2000
TI Poly(alkyl acetylenes): a new class of highly luminescent polyacetylenes
AU Huang, Yuan Ming; Wing Yip Lam, Jacky; Ka Leung Cheuk, Kevin; Ge, Weikun; Tang, Ben Zhong
CS Department of Physics, Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, Peop. Rep. China
SO Thin Solid Films (2000), 363(1,2), 146-148
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 73
AB Mono-substituted poly(alkyl phenylacetylenes) were prepared using transition metal catalysts and the optical absorption and photoluminescence of the polymers were measured. The poly(alkyl acetylene)s, -{HC:C[(CH2)mR]}n- with R = OCO-Biphenyl-OC7H15 [m = 2, 3, 4, 9], CO2(CH2)6OCO-Biphenyl-OC9H19 [m = 2, 8], and OCO-Biphenyl-OCOC11H23 [m = 4] emit strong deep-blue light, readily observable by the naked eye under normal room illumination conditions. The photoluminescence intensity of the poly(nonyl acetylene)s is at least six times higher than that of poly(1-phenyl-1-butyne) di-substituted polyacetylene.
ST polyacetylene phenylacetylene alkyl aryl substituent luminescence; conjugated polymer phenylacetylene chain length alkyl substituent
IT Polymers, properties
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(conjugated; photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)
IT Polymer chains
(length; photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)

IT Polyacetylenes, properties
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(phenylene-containing; photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)
IT Luminescence
Optical absorption
(photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)
IT 94844-29-8P, Poly(ethylphenylacetylene) **222853-71-6P**
225366-83-6P 225366-84-7P 225500-66-3P 225500-68-5P 225500-70-9P
225500-72-1P 246025-27-4P
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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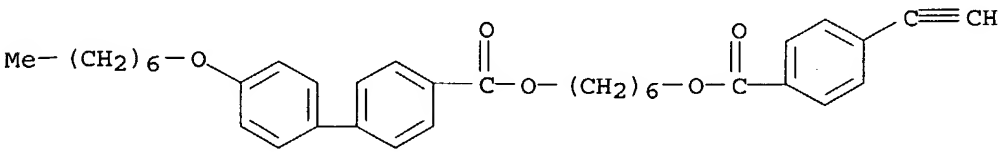
IT **222853-71-6P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(photoluminescence and optical absorption of alkyl- and aryl-substituted polyacetylenes and deep blue emittance of nonylacetylene polymer)
RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:815345 CAPLUS
DN 132:173261
ED Entered STN: 28 Dec 1999
TI Structure-Property Relationships for Photoconduction in Substituted Polyacetylenes
AU Tang, Ben Zhong; Chen, Hong Zheng; Xu, Rui Song; Lam, Jacky W. Y.; Cheuk, Kevin K. L.; Wong, Henry N. C.; Wang, Mang
CS Department of Chemistry and Center for Display Research, Hong Kong University of Science & Technology, Clear Water Bay Kowloon, Hong Kong
SO Chemistry of Materials (2000), 12(1), 213-221
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB New photoconductive materials are explored from three groups of polyacetylenes: poly(phenylacetylenes) -[HC:C(C6H5-p-R)]n-, poly(3-thienylacetylenes) -[HC:C(3-C4H2S-β-R')]n-, and poly(1-alkynes) -{HC:C[(CH2)mR'']}n-, where R = CH3 (2), CO2(CH2)6OCO-Biph-OC7H15 (Biph = 4,4'-biphenylyl; 3); R' = Si(CH3)3 (4), Br (5); and R'' = CO2(CH2)6OCO-Biph-OC9H19 (m = 2; 6), 9-carbazolyl (m = 3; 7) and OCO-Biph-OC7H15 (m = 9; 8). Photoconduction in the polyacetylenes under illumination of visible light is investigated using photoinduced xerog. discharge technique. In the pure (undoped) state, all the polyacetylenes except 5 show higher photosensitivity than do poly(phenylacetylene) (R = H; 1), a well-studied photoconducting polyacetylene, and poly(9-vinylcarbazole), the best-known photoconducting vinyl polymer. Among the polyacetylenes, photoconduction performance of the polymers with electron-donating and/or hole-transporting moieties is superior to those with electron-accepting ones. The liquid crystalline polymer 6 exhibits very high photosensitivity, probably due to the formation of crystalline aggregates of its mesogenic pendants induced by the thermal treatment in the photoreceptor preparation process. C60 acts as a photocond. enhancer when doped to amorphous 3, but functions as a crystallinity-breaking plasticizer when doped to liquid crystalline 6, leading to a large decrease in photocond. While 3 shows a low photosensitivity (2.8 + 10-3 lx-1-s-1) to a 573 nm light in the undoped state, doping with I2 and sensitization with Crystal violet (CV) dramatically increase its photosensitivity (up to 41.2 + 10-3 lx-1-s-1). The CV-sensitized 4 exhibits high photocond. in the near-IR spectral region, which may find technol. applications in the digital photoimaging systems.
ST electrophotog photoreceptor photoconductive polyacetylene; photoconduction mol structure property relationship polyacetylene deriv electrophotog
IT Polyimides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(interface layer; photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
IT Polycarbonates, uses
RL: NUU (Other use, unclassified); USES (Uses)
(matrix; photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects

on)
IT Crystallinity
Doping
Electrophotographic photoconductors (photoreceptors)
Molecular structure-property relationship
Photoconductivity
(photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
IT Polyacetylenes, properties
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
IT 83890-47-5
RL: NUU (Other use, unclassified); USES (Uses)
(charge transport material; photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
IT 548-62-9, Crystal violet 7553-56-2, Iodine, properties 99685-96-8, C60 Fullerene
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(dopant/sensitizer; photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
IT 25038-69-1 34807-69-7 **222853-71-6** 225244-01-9 225244-03-1 225366-83-6 225500-72-1 258513-12-1
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)
RE.CNT 119 THERE ARE 119 CITED REFERENCES AVAILABLE FOR THIS RECORD
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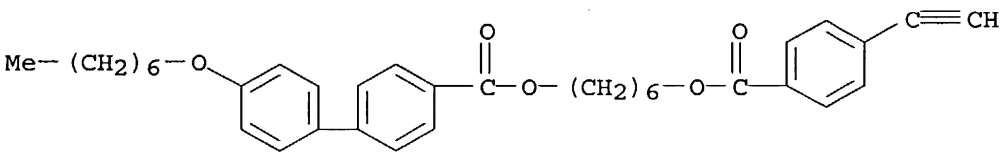
IT **222853-71-6**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(photoconduction in electrophotog. photoreceptors of substituted polyacetylenes and doping/sensitizing- and morphol. effects on)

RN 222853-71-6 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:777840 CAPLUS

DN 132:322195

ED Entered STN: 09 Dec 1999

TI Liquid crystalline polyacetylenes: a new class of mesomorphic materials with novel optical and electronic properties

AU Tang, Ben Zhong; Lam, Wing Yip; Kong, Xiangxing; Lee, Priscilla P. S.; Wan, Xinhua; Kwok, Hoi-Sing; Huang, Yuan Ming; Ge, Weikun; Chen, Hongzheng; Xu, Ruisong; Wang, Mang

CS Dep. Chem. and Cent. Display Res., Hong Kong Univ. Sci. and Technol. (HKUST), Kowloon, Peop. Rep. China

SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3800(Liquid Crystals III), 62-71
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal
LA English
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 75, 76
AB Different kinds of polyacetylenes with general mol. structure of -[HC=C(C6H4-mesogen)]p- poly(arylacetylene)s and -HC=C[(CH2)n-mesogen]p- poly(alkylacetylene)s were designed and synthesized. Pendant interaction and backbone rigidity in the polymers are controlled through design to obtain polyacetylenes with interesting mesomorphic, optical, and electronic properties. The rigid polyacetylene backbone enables ready alignments of the LCPA mols. by simple mech. perturbations. Upon photoexcitation, the LCPAs with the poly(alkylacetylene) skeleton structure emit strong blue light clearly observable by the naked eye under normal room illumination conditions. The shape and position of the emission peaks and the color of the emitted light can be manipulated by application of external elec. fields. The LCPAs exhibit excellent intrinsic photocond. in the visible spectral region in the undoped (pure) states, and doping with electron acceptor/donor further increases the photoconduction efficiency of the LCPAs.
ST polyarylacetylene pendant mesogen liq crystal emittance photoconduction; polyalkylacetylene chain rigidity alignment LCP mech perturbation; polyacetylene cyanobiphenyl liq crystal photocond blue light emission
IT Polyacetylenes, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(alkyl- and aryl-mesogen side chain containing; preparation and morphol. and photoluminescence and conductivity of liquid crystalline polyacetylenes with pendant
alkyl- and aryl-mesogens)
IT Luminescence
(blue light; preparation and morphol. and photoluminescence and conductivity of
liquid crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; preparation and morphol. and photoluminescence and conductivity of
liquid crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT Conducting polymers
(photocond.; preparation and morphol. and photoluminescence and conductivity of
liquid crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT Liquid crystals, polymeric
(polyacetylenes; preparation and morphol. and photoluminescence and conductivity of
liquid crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT Emission spectra
Photoconductivity
Polymer morphology
(preparation and morphol. and photoluminescence and conductivity of liquid crystalline
polyacetylenes with pendant alkyl- and aryl-mesogens)
IT Polymer chains
(rigid; preparation and morphol. and photoluminescence and conductivity of liquid
crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT 548-62-9, Crystal violet 7553-56-2, Iodine, uses 99685-96-8, C60 Fullerene
RL: MOA (Modifier or additive use); USES (Uses)
(dopant; preparation and morphol. and photoluminescence and conductivity of liquid
crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)
IT 595-90-4, Tetraphenylstannane 13283-01-7, Hexachlorotungsten
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; preparation and morphol. and photoluminescence and conductivity

of liquid crystalline polyacetylenes with pendant alkyl- and aryl-mesogens)

IT 194670-08-1P 194670-09-2P 216219-49-7P 216219-50-0P
222853-71-6P 225245-43-2P 225245-47-6P 225245-54-5P
225366-83-6P 225366-84-7P 225366-85-8P 225366-86-9P 225500-66-3P
225500-68-5P 225500-70-9P 225500-72-1P 259272-16-7P 259272-18-9P
259272-20-3P 264886-45-5P 266370-79-0P 266370-81-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and morphol. and photoluminescence and conductivity of liquid crystalline
polyacetylenes with pendant alkyl- and aryl-mesogens)

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD

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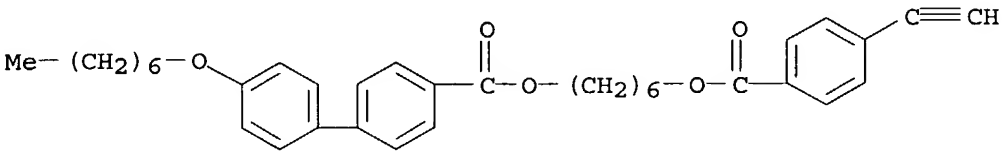
IT **222853-71-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and morphol. and photoluminescence and conductivity of liquid crystalline

polyacetylenes with pendant alkyl- and aryl-mesogens)
RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:558993 CAPLUS
DN 132:166874
ED Entered STN: 02 Sep 1999
TI Photoconductivity of substituted polyacetylenes and their doped composites
AU Chen, H. Z.; Lam, J. W. Y.; Xu, R. S.; Wang, M.; Tang, B. Z.
CS Department of Polymer Science & Engineering, Zhejiang University, Hangzhou, 310027, Peop. Rep. China
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1999), 40(2), 651-652
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
AB The intrinsic photocond. and the doping effects of electron acceptor (C60 and I2) and electron donor (crystal violet) in substituted polyacetylenes are studied. All the polyacetylenes studied show photocond. 500-750 nm, and higher photosensitivity, except for one case. Pendent side chains play an important role in photocond. of substituted polyacetylenes, which is useful in the design and synthesis of substituted polyacetylenes with excellent photocond. There ate two effects of decline and enhancement of the photocond. in substituted polyacetylene upon C60 doping. The photocond. is improved regardless of whether the electron acceptor I2 or electron donor crystal violet is doped in polyacetylenes.
ST polyacetylene photocond dopant
IT Dopants
Photoconductors
(Photocond. of substituted polyacetylenes and their doped composites)
IT Polyacetylenes, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Photocond. of substituted polyacetylenes and their doped composites)
IT 548-62-9, Crystal violet 7553-56-2, Iodine, properties 25038-69-1 34807-69-7 99685-96-8, [5,6]Fullerene-C60-Ih **222853-71-6** 225244-01-9 225244-03-1 225366-83-6 225500-72-1 258513-12-1
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Photocond. of substituted polyacetylenes and their doped composites)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Kong, X; Macromolecules 1999, V32, P1722 CAPLUS
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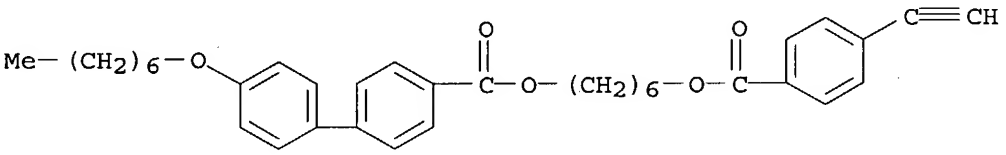
(7) Tang, B; Macromolecules 1998, V31, P2419 CAPLUS
IT **222853-71-6**
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Photocond. of substituted polyacetylenes and their doped composites)
RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:510855 CAPLUS
DN 131:287059
ED Entered STN: 18 Aug 1999
TI Strong Luminescence from Poly(1-alkynes)
AU Huang, Yuan Ming; Lam, Jacky Wing Yip; Cheuk, Kevin Ka Leung; Ge, Weikun; Tang, Ben Zhong
CS Departments of Physics and Chemistry and Center for Display Research, Hong Kong University of Science & Technology, Kowloon, Peop. Rep. China
SO Macromolecules (1999), 32(18), 5976-5978
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73
AB This paper will present results proving that the nonluminescence of monosubstituted poly(1-alkynes) is a misconception and demonstrate that the photoluminescence efficiency of the polymers can be tuned by changing their mol. structures.
ST polyacetylene luminescence; polyalkyne luminescence
IT Luminescence
(strong luminescence from poly(1-alkynes))
IT Polyacetylenes, properties
RL: PRP (Properties)
(strong luminescence from poly(1-alkynes))
IT 94844-29-8, Poly(ethylphenylacetylene) **222853-71-6** 225500-66-3 225500-68-5 225500-70-9 225500-72-1 246025-23-0 246025-25-2 246025-27-4
RL: PRP (Properties)
(strong luminescence from poly(1-alkynes))
RE.CNT 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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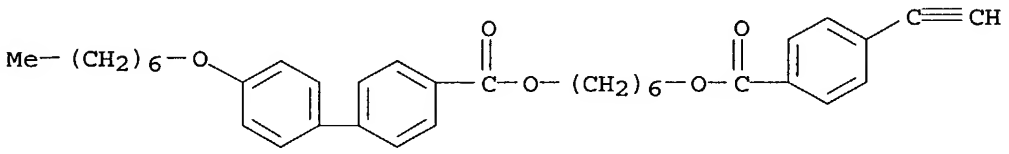
IT **222853-71-6**
RL: PRP (Properties)
(strong luminescence from poly(1-alkynes))
RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:213775 CAPLUS
DN 131:5614
ED Entered STN: 06 Apr 1999
TI Isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carbonyl)phenyl]acetylene}
AU Lam, Wing Yip; Kong, Xiangxing; Tang, Ben Zhong
CS Department of Chemistry, The Hong Kong University of Science and Technology, Hong Kong, Peop. Rep. China
SO Polymeric Materials Science and Engineering (1999), 80, 392-393
CODEN: PMSEDG; ISSN: 0743-0515
PB American Chemical Society
DT Journal
LA English
CC 35-4 (Chemistry of Synthetic High Polymers)
AB A functional phenylacetylene derivative, [4-({[6-({[5'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carbonyl)phenyl]acetylene (B6E7), were synthesized. B6E7 was polymerized by rhodium-diene complexes to PB6E7 with high mol. wts. (Mw > 10,000). IR, UV, and NMR analyses confirm that PB6E7 possesses a stereoregular alternating-double-bond backbone with a predominant cis conformation. The cis-rich polymer undergoes active isomerization at temps. above 150°. Intrachain cyclization followed by chain scission at the high temps. releases 1,3,5-trisubstituted benzene as the sole aromatization product, revealing that the repeat units of the polymer chains are linked in a regular head-to-tail fashion.
ST isomerization cyclization stereoregular polyphenylacetylene deriv
IT Polymer chains
(conformation; isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carbonyl)phenyl]acetylene})
IT Polymerization catalysts
(isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carbonyl)phenyl]acetylene})
IT Polyacetylenes, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb

onyl)phenyl]acetylene})

IT Polymer chains
(stereoregular; isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb onyl)phenyl]acetylene})

IT Isomerization
(thermal; isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb onyl)phenyl]acetylene})

IT 7440-16-6D, Rhodium, complexes, uses
RL: CAT (Catalyst use); USES (Uses)
(isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb onyl)phenyl]acetylene})

IT **222853-70-5P 222853-71-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb onyl)phenyl]acetylene})

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

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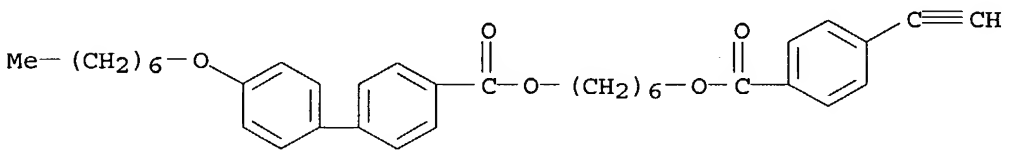
(11) Tang, B; Macromolecules 1998, V31, P2419 CAPLUS

IT **222853-70-5P 222853-71-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(isomerization and cyclization of stereoregular poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}-carb onyl)phenyl]acetylene})

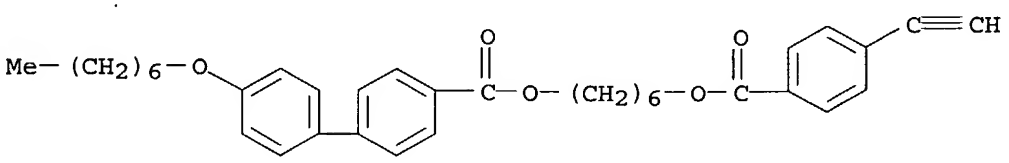
RN 222853-70-5 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester (9CI) (CA INDEX NAME)



RN 222853-71-6 CAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



L4 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:129341 CAPLUS
DN 130:297045
ED Entered STN: 01 Mar 1999
TI Synthesis, Mesomorphism, Isomerization, and Aromatization of Stereoregular Poly{[4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)-hexyl]oxy}carbonyl)phenyl]acetylene}
AU Kong, Xiangxing; Lam, Jacky Wing Yip; Tang, Ben Zhong
CS Department of Chemistry, Hong Kong University of Science Technology, Kowloon, Peop. Rep. China
SO Macromolecules (1999), 32(6), 1722-1730
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 75
AB The polymerization of a phenylacetylene derivative, [4-({[6-({[4'-(heptyl)oxy-4-biphenylyl]carbonyl}oxy)hexyl]oxy}carbonyl)phenyl]acetylene (I) using molybdenum and tungsten halides and rhodium-diene complexes as catalyst was carried out to obtain side-chain liquid crystalline polyacetylenes where the main chain is the rigid polyacetylene. The rhodium-initiated polymerization produce the polymer of high mol. weight (Mn up to 1.2 + 105) in high yields (up to 93%). The IR, UV, and NMR spectra confirm that the polymer possesses a stereoregular alternating-double-bond backbone with a predominant cis conformation. The DSC, POM [polarized optical microscopy], and x-ray diffraction measurements reveal that the polymer is a liquid crystalline with smectic A mesophase at 135-146°. The cis-rich polymers undergoes active isomerization to the trans conformation at 170°. Intrachain cyclization followed by chain scission at ca. 200° releases 1,3,5-trisubstituted benzene as the sole aromatization product, proving that the repeat units of the polymer chains are linked in a regular head-to-tail fashion.
ST polyacetylene side chain liq crystal prepn smectic mesophase; conformation polyacetylene side chain liq crystal; aromatization intrachain cyclization chain scission polyacetylene LCP
IT Polymer chains
(conformation; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Polymer chains
(dynamics; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Polymer morphology
(phase; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Aromatization
Cyclization
Polymerization
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and

aromatization processes)
IT Polyacetylenes, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid
crystal and chain structure elucidation via isomerization and aromatization processes)
IT Polymer chains
(scission; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Polymer chains
(side; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Liquid crystals, polymeric
Liquid crystals, polymeric
(smectic A; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT Isomerization
Polymer degradation
(thermal; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT 59748-17-3P, 4'-(Heptyl)oxy-4-biphenylylcarboxylic acid 222853-69-2P, 6-Hydroxy-1-hexyl [4'-(Heptyl)oxy-4-biphenylyl]carboxylate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT **222853-70-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)
IT 595-90-4, Tetraphenylstannane 10241-05-1, Pentachloromolybdenum 12086-08-7, Chloro(1,5-cyclooctadiene)(piperidine)rhodium 12092-47-6, Bis(chloro(1,5-cyclooctadiene)rhodium) 12257-42-0, Bis(chloro(norbornadiene)rhodium) 13283-01-7, Hexachlorotungsten 32758-71-7, (Norbornadiene)tris(trimethylphosphine)rhodium(1+) hexafluorophosphate 33111-52-3, Ammine(chloro)(1,5-cyclooctadiene)rhodium 171615-61-5, Aqua(1,5-cyclooctadiene)(4-toluenesulfonato)rhodium 188403-98-7, Aqua(norbornadiene)(4-toluenesulfonato)rhodium
RL: CAT (Catalyst use); USES (Uses)
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid
crystal and chain structure elucidation via isomerization and aromatization processes)
IT **222853-71-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid
crystal and chain structure elucidation via isomerization and aromatization processes)
IT 629-04-9, 1-Bromoheptane 629-11-8, 1,6-Hexanediol 10602-00-3, 4-Ethynylbenzoic acid 58574-03-1, 4-Hydroxybiphenyl-4'-carboxylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid

crystal and chain structure elucidation via isomerization and aromatization processes)

RE.CNT 90 THERE ARE 90 CITED REFERENCES AVAILABLE FOR THIS RECORD

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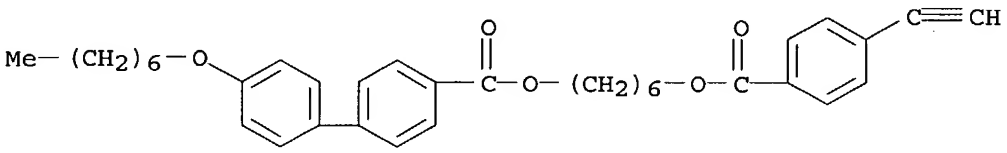
IT **222853-70-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)

RN 222853-70-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester (9CI) (CA INDEX NAME)



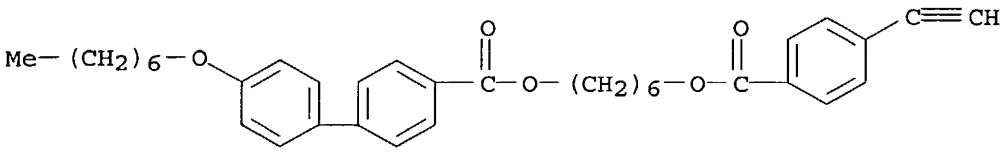
IT **222853-71-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation of mesomorphic of alkoxybiphenyl side-chain polyacetylene liquid crystal and chain structure elucidation via isomerization and aromatization processes)

RN 222853-71-6 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(heptyloxy)-, 6-[(4-ethynylbenzoyl)oxy]hexyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 222853-70-5
CMF C35 H40 O5



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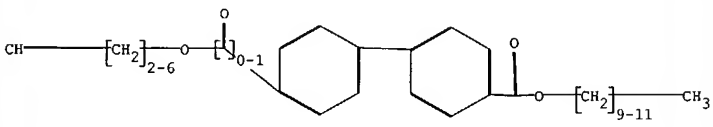

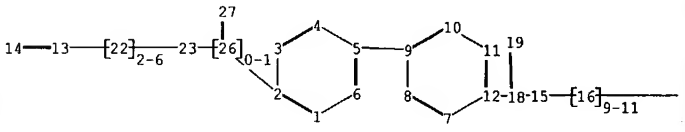

chain nodes :
13 14 15 16 17 18 19 22 23 26 27
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12
chain bonds :
2-26 5-9 12-18 13-14 13-22 15-16 15-18 16-17 18-19 22-23 23-26 26-27
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
exact/norm bonds :
15-18 18-19 23-26 26-27
exact bonds :
2-26 5-9 12-18 13-14 13-22 15-16 16-17 22-23
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 22:CLASS
23:CLASS 26:CLASS 27:CLASS